The present listing of claims replaces all prior versions.

1. (Currently Amended)   A method of treating sleep disordered breathing
   comprising the steps of

   determining the likelihood of a patient being asleep,

   delivering treatment so as to prevent airway collapse if said patient is asleep,

   determining the presence of an obstruction in said patient's airway, and

   if an obstruction is present increasing said treatment until said obstruction is no

      longer present,

   wherein said treatment comprises ~~and of~~ applying electrical stimulation of

      afferent nerves ~~to increase muscle tone of upper airway muscles, wherein the~~

      ~~application of electrical stimulation is based upon the likelihood of the patient~~

      ~~being asleep~~,

   said presence of an obstruction is determined by sensing a change in

      transthoracic impedance, and

   said patient's sleep state is determined based upon the time of day and the

      patient's postural state.

2.   (cancelled)

3.   (Currently Amended)   The method of claim ~~2 whereby~~ 1 wherein the
site of electrical stimulation is within or adjacent to the genioglossus muscle.

4.   (Currently Amended)   The method of claim ~~2 whereby~~ 1 wherein the site of electrical stimulation is in the vicinity of the hypoglossal motor nucleus or excitatory afferent nerve pathways leading to this structure.

5.   (Currently Amended)   The method of claim 1 ~~whereby~~ wherein the electrical stimulation comprises trains of electrical pulses.

6.   (Currently Amended)   The method of claim 5 ~~whereby~~ wherein the train length is approximately 10-30 pulses.

7.   (Currently Amended)   A method of treating sleep disordered breathing comprising the steps of
determining the likelihood of a patient being asleep,

delivering treatment so as to prevent airway collapse if said patient is asleep,

determining the presence of an obstruction in said patient's airway, and

if an obstruction is present increasing said treatment until said obstruction is no longer present,

wherein said treatment comprises ~~and of~~ applying mechanical stimulation of

afferent nerves ~~to increase muscle tone of upper airway muscles, wherein the application of mechanical stimulation is based upon the likelihood of the patient being asleep,~~

said presence of an obstruction is determined by sensing a change in transthoracic impedance, and

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said patient's sleep state is determined based upon the time of day and the

patient's postural state.

8.   (Currently Amended)   The method of claim 7 ~~whereby~~ wherein

mechanical stimulation is performed by a piezo electric mechanical element

implanted at a site in the vicinity of the upper airway.

9.   (Currently Amended)   The method of claim 8 ~~whereby~~ wherein the

piezo-electric mechanical element is implanted within or adjacent to the base of

the genioglossus muscle.

10.   (Currently Amended)   The method of claim 7 ~~whereby~~ wherein the

mechanical stimulation is periodic.

11.   (Currently Amended)   The method of claim 10 ~~whereby~~ wherein the

period is ~~in~~ on the order of several seconds of vibration.

12.   (Currently Amended)   The method of claim 7 ~~whereby~~ wherein the

mechanical vibration occurs at frequencies in the range of 10-50 Hz.

13.   (Currently Amended)   The method of claim 1 ~~whereby~~ wherein

stimulation is repeated in accordance with the detected state of the airway.

14.   (Currently Amended)   The method of claim 1 ~~whereby~~ <u>wherein</u> stimulation is carried out in accordance with a model of Cheyne-Stokes Respiration.

15.   (Currently Amended)   Apparatus for treating respiratory disorders <u>in a patient</u> ~~comprising a piezo-electric mechanical element~~ adapted for implant within or adjacent <u>to</u> the base of genioglossus muscle, <u>comprising</u>

<u>a piezo-electric mechanical element;</u>

<u>a detector to detect transthoracic impedance changes;</u>

a controller adapted to elicit vibration of the element via an electrical signal <u>to prevent airway collapse during sleep,</u> <u>to determine the presence of an obstruction, and to adjust said vibration upon the presence of an obstruction;</u>

a real time clock for determining time of day<u>;</u>~~,~~ and

a position sensor for sensing postural state<u>;</u>

<u>wherein said element is vibrated only for combinations of time of day and postural state that indicate that said patient is likely to be sleeping.</u>

16-31. (cancelled)

32.   (Currently Amended)   The method of claim 7 ~~whereby~~ <u>wherein</u> stimulation is repeated in accordance with the detected state of the airway.

33.   (Currently Amended)   The method of claim 7 ~~whereby~~ <u>wherein</u> stimulation is carried out in accordance with a model of Cheyne-Stokes Respiration.

34. (New)   A method of treating sleep disordered breathing comprising the
     steps of

determining the likelihood of a patient being asleep,

delivering treatment so as to prevent airway collapse if said patient is asleep,

determining the presence of an obstruction in said patient's airway, and

if an obstruction is present increasing said treatment until said obstruction is no
     longer present,

wherein said treatment comprises applying electrical stimulation of afferent
     nerves, and

said presence of an obstruction is determined by sensing a change in
     transthoracic impedance.